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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/549,782	04/14/2000	Stefan Eckart	0100.0000730	8961

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EXAMINER	
LEVITAN, DMITRY	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/549,782	ECKART ET AL.	
	Examiner	Art Unit	
	Dmitry Levitan	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Amendment, filed 06/14/04, has been entered. Claims 1-60 remain pending.

Drawings

1. The informal drawings Fig. 3-6 are not of sufficient quality. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Examiner is trying his best to examine the case with the current drawings.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The disclosure is objected to, because abbreviations or acronyms VBV are cited throughout the specification without explanation. Applicant should provide a full explanation for the acronyms at least at their first occurrence in the specification.

Claim Rejections - 35 USC § 112

4. In light of Applicant's amendment and remarks, claims 1-35 and 43-60 rejection under 35 U.S.C. 112, second paragraph, has been withdrawn.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 23, 25, 31, 36-42, 52, 54, 57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
The specification does not provide sufficient details to enable a skilled in the art to make and use the invention because it does not adequately describe the following:

Regarding claim 36, how to adjust a Tearliest value and Tlatest value for each packet in a data stream for a plurality of data streams and how to multiplex packets from several data streams according to Tearliest value and Tlatest value to provide drift compensated output data stream.

Regarding claim 40, how to derive the buffer delay information from the plurality of data streams.

Regarding claims 23, 25, 31, 52, 54 and 57 how to calculate a new current time value based on the size of empty packet, marked candidate and selected candidate.
The specification does not provide enough details about the structure and operation of the elements associated with the above identified claimed features to enable one skilled in the art to make and use the invention without undue experimentation.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-35 and 43-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 33 and 43 limitation "obtaining buffer delay information" is unclear, because it is not understood what buffer delay means in the invention: is it a maximum delay defined by the buffer length or an average delay of a packet in a buffer.

Claims 4, 6 and 13 limitations "substantially constant" and "constant" frame rate are unclear, because specification does not provide criteria how to differentiate substantially constant from constant.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-9, 11-16, 19, 32-39, 41-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 6,188,700) in view of VanDeusen (US 6,598,172).

11. Regarding claims 1, 33 and 43, Kato substantially teaches the limitations of the claims.

A method, a multiplexer and a program, comprising:

Obtaining a first input data stream (video bit stream on Fig. 1 and 1:36-45);

Obtaining buffer delay information (d0 start time on Fig. 3 and 3:11-15, inherently includes buffer delay time as a portion of the lapse of time on the encoder side);

Determining a first lowest bit occurrence constraint, based on the buffer delay information (locating zigzag locus of the encoder system to the left of the line cd on Fig. 3 and starting on d0, as cd line represents the bit occupancy quantity 3:66-67 and 4:1-4);

Determining a first highest bit occurrence constraint, based on the shifting first lowest bit occurrence constraint upward (line ab on Fig. 3, as the shift between lines ab and cd expresses the size B of the encoder buffer 3 3:40-44);

Determining a first earliest time constraint, based on first highest bit occurrence constraint (start time d0 is located to the left of the ab line on Fig. 3, so the earliest start time is defined by line ab);

Determining a first latest time constraint, based on first lowest bit occurrence constraint (start time d0 is located to the left of cd line on Fig. 3, so the latest start time is limited by line cd).

Kato does not teach determining a first lowest bit occurrence constraint based on the first time stamp, however Kato teaches using time points at which n-th encoded picture is encoded 3:57-65 and MPEG standard.

VanDeusen teaches using time stamps for video packets (1:18-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add determining a first lowest bit occurrence constraint based on the first time stamp of VanDeusen to the system of Kato to improve the synchronization of the encoder.

12. Regarding claim 36, Kato substantially teaches the limitations of claim 36.

Kato teaches multiplexing streams (1:62-67) according to determined Tearliest and Tlatest as shown above in the claim 1 rejection (earliest and latest time constraints).

Kato does not teach compensating the drift by adjusting the packets time values.

VanDeusen teaches compensating the drift by adjusting the packets time values (drift metric adjustment on Fig. 6 and 8:22-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add compensating the drift by adjusting the packets time values of VanDeusen to the system of Kato to improve the system output data stream stability.

13. Regarding claim 2, Kato teaches first lowest bit constraint increasing linearly over time (line cd on Fig. 3).

14. Regarding claims 12 and 44, Kato teaches first highest bit constraint shifted upward by a constant amount (constant B on Fig. 3).

15. Regarding claims 4, 6, 7 and 38, Kato teaches a system with a substantially constant (video signals decoded at constant rate 3:57-65), constant (3:33-37) and variable (7:66-67 and 8:1-9) frame rate input data stream.

16. Regarding claims 8, 9, 11 and 41, Kato teaches a system with constant and variable frame sizes input data stream (video stream depending on the nature of picture 1:15-35).

17. Regarding claim 37, Kato teaches a system wherein relations between Tearliest and Tlatest includes buffer delay information (d0 start time on Fig. 3 and 3:11-15, inherently includes buffer delay time as a portion of the lapse of time on the encoder side and relations between Tearliest and Tlatest depend on the buffers size/delay selection, based on the start time).

18. Regarding claim 13 and 45, Kato teaches a system wherein multiplexer 14 operates with plurality of input streams (1:62-67) in a manor described in rejection of claim 1 above.

19. Regarding claim 14, Kato teaches a system wherein a second stream has a second substantially constant bit rate (video stream 3:57-65).

20. Regarding claims 15, 34 and 46, Kato teaches multiplexing multiple streams. Kato does not teach dividing the streams into packets and combining packets in one output stream. Official notice is taken that dividing the streams into packets and combining packets in one output stream is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add dividing the streams into packets and combining packets in one output stream to the system of Kato to utilize one address for the packets of the output stream, to simplify the packets routing.

21. Regarding claims 16 and 47, Kato does not teach combining packets in one output stream determined by each incoming stream earliest and latest time constraints.

Official notice is taken that combining packets in one output stream determined by each incoming stream earliest and latest time constraints. is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine packets in one output stream determined by incoming stream earliest and latest time constraints in the system of Kato to avoid further delays for late packets.

22. Regarding claims 19 and 48, Kato teaches calculating an initial time value (start time d0 4:24-34).

23. Regarding claims 32, 35 and 42, Kato teaches the output stream as an MPEG stream (2:23-45).

24. Regarding claims 3, 5 and 39, lines cd and ab would inherently vary from being linear when the drift is compensated (slope change per bit rate adjustment 3:33-37).

Response to Arguments

25. Applicant's arguments filed 06/14/04 have been fully considered but they are not persuasive.

26. On page 4 of the Response, Applicant argues that Kato teaches away from cd and ab lines limitations of Fig. 3, correlating the time axis to variable Tau.

Examiner respectfully disagrees.

Applicant has not identified the portion of the Kato teachings related to variable Tau (teaching away from time axis). Examiner did not find Kato teachings about variable Tau in the Kato teachings.

Kato teaches time axis on Fig. 3 in a manner of the invention Fig. 3-6, 3:10-15.

27. On page 4 of the Response, Applicant argues that Kato does not teach utilizing buffer delay information in his system.

Examiner respectfully disagrees.

Kato inherently utilizes buffer delay information, because Kato discloses d0 start time on Fig. 3 and 3:11-15, that inherently includes buffer delay time as a portion of the lapse of time on the encoder side, because buffer delay is essential part of the decoder delay.

28. On page 6 of the Response, Applicant argues that Kato and VanDeusen system combination is different from present invention (claim 36), because the combined system would apply drift metrics to the completed packet and the present invention uses the drift metrics to generate the packet.

Examiner respectfully finds this argument to be irrelevant, claim 36 limitations require "adjusting values for each packet", there are no limitations in claim 36 concerning generating the packet.

Examiner therefore believes that the cited references meet all the claims limitations and the rejection is proper.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sato	US005566174A	MPEG information signal conversion system.
Kawase	US005774455A	Data transmission apparatus and method conducting variable bit rate transmission.
Kim	US005793436	Buffer occupancy control method.
Martin	US006351564B1	Method of switching of coded video sequences.
Yamato	US006345122B1	Compressed picture data editing apparatus.
Veltman	US005481543A	Ration input buffer arrangements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL

Dmitry Levitan
Patent Examiner.
09/22/04

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